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No. XXXI.

MONTHLY and annual Results of Meteorological Observations made by William Dunbar, Esq. at the Forest, 4 Miles East of the River Mississippi, in Latitude 31°. 28'. North, and Longitude 91°. 30'. West of Greenwich. Communicated by the Author.

Read, April 6th, 1804.

YEAR, 1801.	THERMOMETER.				BAROMETER.				RAIN.
	Greatest height.	Least height.	Mean height.	Range.	Greatest height.	Least height.	Mean height.	Range.	Total.
	Deg.	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.	Inches.	Inches.
January.	77	25	51	52	30 30	29 74	30 06	0 56	2 82
February.	79	27	57½	52	30 15	29 51	29 93	0 54	4 81
March.	88	38	61	50	30 08	29 74	29 51	0 34	3 20
April.	89	39	62	50	30 10	29 65	29 88	0 45	4 85
May.	92½	47	72	45½	30 00	29 76	29 89	0 24	0 95
June.	98	68	82	30	30 00	29 77	29 92	0 23	0 50
July.	96	65	80	31	30 00	29 83	29 60	0 17	4 83
August.	92	70	79	22	30 00	29 75	29 92	0 25	3 12
September.	92	61	77	31	30 00	29 74	29 92	0 26	5 68
October.	85	44	76	41	30 08	29 76	30 97	0 32	3 22
November.	77	30	55	27	30 25	29 74	30 04	0 51	5 85
December.	72	24	49	48	30 25	29 46	30 30	0 79	5 67
Whole year.	98	24	66½	74	30 25	29 46	30 02½	0 79	45 50

YEAR, 1802.	Deg.	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.	Inches.	Inches.
January.	79	27	55	52	30 25	29 63	30 00	0 62	5 23
February.	78	24	59	54	30 22	29 71	30 36	0 51	4 79
March.	82	35	62	47	30 18	29 70	29 97	0 48	6 23
April.	88	52	71	36	30 18	29 71	30 08	0 47	4 98
May.	Thermom. broken.				30 04	29 61	29 62	0 43	3 67
June.	93	62	65	31	30 04	29 75	29 90	0 29	2 14
July.	93	66	78½	27	30 00	29 76	30 56	0 24	9 98
August.	92	61	78	31	30 06	29 79	29 92	0 27	6 32
September.	98	45	76	53	30 07	29 79	29 93	0 28	1 67
October.	90	32	65	58	30 20	29 72	29 85	0 48	2 33
November.	80	28	53	52	30 19	29 76	29 98	0 43	4 51
December.	70	26	47	44	30 25	29 75	30 00	0 50	6 07
Whole year.	98	24	59	74	30 25	29 61	30 01	0 64	57 92

YEAR, 1803.	THERMOMETER, within.				THERMOMETER, without.				BAROMETER.				RAIN.
	Greatest height.	Least height.	Mean height.	Range.	Greatest height.	Least height.	Mean height.	Range.	Greatest height.	Least height.	Mean height.	Range.	Total.
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Inches.	Inches.	Inches.	Inches.	Inches.
January.					78	26	47	52	30 27	29 79	30 02	0 48	2 00
February.					84	28	52	56	30 27	29 73	29 56	0 54	2 15
March.					94	36	62	58	30 16	29 65	29 93	0 51	1 29
April.					92	42	69	48	30 07	29 71	29 94	0 36	3 70
May.					92	48	71	44	30 13	29 59	29 85	0 54	3 77
June.	90	72	81	18	94	65	79	29	30 04	29 63	29 89	0 41	2 85
July.	90	70	82	20	95	68	81	27	30 05	29 71	29 92	0 34	2 41
August.	91	72	81	19	94	68	80	26	30 05	29 70	29 92	0 35	2 15
September.	90	64	77	26	94	62	76	32	30 03	29 73	29 89	0 30	4 01
October.	84	62	74	22	84	60	73	24	30 03	29 71	29 75	0 32	3 37
November.	79	38	62	41	80	30	57	50	30 13	29 73	29 95	0 40	5 41
December.	74	44	62	30	72	27	53	45	30 38	29 79	30 07	0 59	4 45
Whole year.	91	38	74	53	95	26	66 $\frac{2}{3}$	69	30 38	29 59	29 89	0 79	37 56

REMARKS.

1803, June 30th, at 7 $\frac{1}{4}$ P. M. The sun being just set, a beautiful rain-bow was painted in the heavens forming a compleat semi-circle, excepting a small portion near the horizon which was imperfect; the external bow was very distinct: the inner bow, which was very vivid in the upper parts, struck the view with an unusual appearance, and, when inspected minutely, two other bows were distinctly seen, within the principal bow, concentric with it, and in contact with each other; (i. e.) where the purple of the first ended, the red of the second commenced, and so of the second and third; a dim ruddy appearance was seen within the third b.w., which might have been taken for the rudiments of a fourth. The second bow was only about half the breadth of its principal, and the vividness of its colours was diminished in the same proportion. The third was of the same breadth with the second, but its brightness was reduced to half that of the other. These bows appeared to diminish in brightness, and to present appearances analogous to the images of a candle reflected from the double surfaces of a plate mirror. As the rain-bow is a reflector by which we can find the place of the sun, we must conclude from this phenomenon, that the horizontal refraction of the atmosphere had produced two images of the sun, above and in contact with the real sun, in the same order in which the bows were visible in the opposite side of the hemisphere.

1803, December 23d, at 5 $\frac{1}{2}$ h. P. M. A very beautiful and very bright halo was seen around the moon; the prismatic colours were very distinct—red within, yellowish in the middle, and blue without.